



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,940	11/09/2006	Yoshihisa Saimoto	1003510-000162	3339

21839 7590 03/29/2010
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

ORLANDO, MICHAEL N

ART UNIT	PAPER NUMBER
----------	--------------

1791

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

03/29/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com
offserv@bipc.com

Office Action Summary	Application No. 10/569,940	Applicant(s) SAIMOTO ET AL.	
	Examiner MICHAEL N. ORLANDO	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The arguments and amendment submitted 12/24/2009 have been fully considered, but the claims remain unpatentable over the prior art as set forth below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More particularly, applicants' claims appear to merely set forth desired physical characteristics in an article, and do not set forth specific structures and/or compositions which would meet such characteristics, either in the claim or in the specification, and as such are believed to be invalid as being vague, indefinite and functional, since they recites the claimed article by what it is desired that they do rather than what they are, and result in having claims the scope of which is indefinite, since one of ordinary skill is unable to determine what compounds and articles are included or excluded therefrom. As such, it is unclear as to what is the scope of the invention of which applicants intend to claim. See *Ex parte Slob* (PO Bd of Appeals) 157 USPQ 172. Applicants should revise their claims in a manner so as to incorporate a more definite structure. The applicant seeks to claim the adhesive by

Art Unit: 1791

properties such as gas transmission, water absorption and elastic modulus making the claims indefinite.

2. Claim 2 and 12-16 recites the limitation "the film layer" in the claims. There is insufficient antecedent basis for this limitation in the claim. There is a number of films involved (metal, based and adhesive). It is unclear which is being referenced when the applicant generically refers to "the film".

3. Claims 12, 13, 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The applicant refers to the metal film (presumed from claims 12 and 15 since only "the film" is indicated) being the outermost portion of the base film on the non-conducting side. This is entirely unclear since according to claim 1, the base film is part of the composite on the circuit side. The applicant is saying that the base film is on the circuit side, but saying in the subsequent claims that metal film is the outermost part of the base film which is found on the non-circuit side. In addition to the adhesive being vague and unclear because it is claimed by its properties rather than its actual make-up the configuration of the composite is also unclear since the applicant is continuously referring to generic terms such as "the film" and specifying that certain layers are located at conflicting locations in the claims.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1791

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-4, 6-9, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grupen-Shemansky (US 5,268,065), hereinafter Grupen, as evidenced by Matsushiro et al. (US 6,010,919).

Regarding claim 1, Grupen discloses a method of applying a metal film to the backside of a semiconductor wafer and an adhesive composite film to the front side of wafer (abstract; figure 5). The front side protective film comprises a silicone rubber

Art Unit: 1791

adhesive contact layer, an aluminum interlayer and a polyester back layer (column 3).

Aluminum is a metal so it not expected to be permeable to gases. Matsushiro, drawn also to semiconductors, evidences this and shows that thin aluminum layers are substantially gas impermeable (column 10, lines 54-65).

Gruppen does not explicitly disclose the front surface as containing circuits, however, such would have been an obvious choice because Gruppen discloses that the front surfaces being covered with the protective film have semiconductor **devices** thereon (column 3, lines 10-15). The use of the term devices indicates Gruppen appreciates that front wafer surface is not bare, but rather contain electrical components. Given the teachings of Gruppen it would have been obvious to utilize the method of Gruppen with circuit patterned semiconductors with the motivation of providing protection and limiting damage of such substrates whereby it would have been expectedly successful because Gruppen is known for providing protection when devices are on the wafer.

Regarding claim 2, Gruppen provides the aluminum layer, polyester layer and silicone rubber layer as indicated above. Aluminum is a metal, which satisfies the claimed metal layer. Each of silicone rubber, aluminum and polyester would be expected to provide the claimed gas permeability especially towards larger gases such as carbon dioxide. Also, the claims do not provide specifics as to the temperature. Substances become less permeable as temperature decreases and likewise gases become less active when temperature decreases. Silicone rubber, polyester film and aluminum would each be expected to provide the claimed permeability especially with

Art Unit: 1791

regard to larger gases such as carbon dioxide when the system is at very low temperatures.

Regarding claim 3, the aluminum layer would not be expected to absorb water and would not permeable to gases.

Regarding claim 4, Grupen indicates that protective layer includes a polyester film (column 3, lines 30-35).

Regarding claims 6 and 7, the merits of the claims have been addressed above.

Regarding claims 8 and 9, the inclusion of the polyester film layer has been discussed above.

Regarding claims 12 and 13, it is unclear what the applicant is claiming or what film is being referenced, but the examiner notes that Grupen shows the metal film as the outermost film layer on the semiconductors backside (figure 4). The adhesive film is on the other side.

4. Claims 5, 10, 11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grupen and Matsushiro, as applied above, and further in view of Saimoto et al. (US 2002/0106868).

Regarding claims 5, 10 and 11, as set forth above Grupen discloses that the adhesive contact layer is the silicone layer. Silicone rubber naturally has an elastic modulus of 1-5Mpa, which would satisfy the claimed modulus. Nonetheless more proof is provided below.

Saimoto, also drawn to semiconductor protecting method via the use of an adhesive film, discloses that in such cases it is preferable that the adhesive portion have an elastic modulus of at least 0.1 MPa ([0010]).

Though the elastic modulus requirements are taken to be inherently satisfied by the teachings of Grupen it would have been obvious nonetheless to utilize an adhesive with such an elastic modulus because it was known that such an elastic modulus leads to better contouring to the surface being protected ([0028]).

Regarding claims 14-16, it is unclear what the applicant is claiming or what film is being referenced, but the examiner notes that Grupen shows the metal film as the outermost film layer on the semiconductors backside (figure 4). The adhesive film is on the other side.

Response to Arguments

5. Applicant's arguments filed 12/24/2009 have been fully considered but they are not persuasive.

The applicant argues that because the references do not specifically teach the physical properties such as the gas transmission and elastic modulus that such are patentably distinguishing.

The examiner disagrees and notes first the claimed compounds can not be claimed by their physical properties as such is vague and indefinite as set forth above. In addition the references are provided as evidence to show that Grupen naturally possesses these characteristics anyway. For the sake of compact prosecution the

Art Unit: 1791

examiner addressed these characteristics, but for the sake patentability these cannot be distinguishing features as they are vague and indefinite. While the applicant may or may not have discovered a certain mixture of additives that provides beneficial attributes towards the claimed process the applicant certainly did not discover nor test every possible adhesive which falls under the indefinite claims (as defined by physical properties). As to the nature of the prior art, Grupen discloses that the adhesive film layer contains a metal layer which is expectedly impermeable to gases as set forth above. Matsushiro is not relied upon for a combination, but is relied upon to show why one would expect Grupen's aluminum layer to be impermeable to high degree. In addition the examiner notes that the comparative examples cited by the applicant in the arguments teach aluminum oxide while the prior art teaches aluminum. Due to the differences the aluminum oxide teachings can not be provided as evidence to show any expected gas transmission rates for aluminum. Any arguments that aluminum oxide gas transmission rates reflect the gas transmission rates of aluminum are not persuasive since they are fundamentally different materials.

The applicant seems to be arguing that one of ordinary skill would not have recognized the favorable benefits of the low gas transmission adhesive layer.

The examiner notes that the mere recognition of a benefit would not be germane to the patentability as the metal layer is by nature highly impermeable. In essence the applicant is arguing that because the latent advantages of Grupen were not recognized they are patentable in themselves and the examiner disagrees with this assertion. Mere

Art Unit: 1791

recognition of latent properties in the prior art does not render nonobvious an otherwise known invention. *In re Wiseman*, 596 F.2d 1019, 201 USPQ 658 (CCPA 1979).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL N. ORLANDO whose telephone number is (571)270-5038. The examiner can normally be reached on Monday-Thursday, 7:30am-4:30pm, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip C. Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MO

Application/Control Number: 10/569,940

Page 10

Art Unit: 1791

/Philip C Tucker/

Supervisory Patent Examiner, Art Unit 1791